Serial No.: 10/624,922 Filed: July 21, 2003

Page : 2 of 11

IN THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims

1. (Currently Amended) A foam composition comprising:

a fibrous material <u>and a plurality of microspheres</u>, wherein the microspheres comprise including heat-expanded microspheres, wherein the microspheres are interspersed within the fibrous material forming a part of the structure of the foam, and wherein the microspheres lack a separate binder phase.

2. (Currently Amended) A composition comprising:

a microsphere component comprising lacking a separate binder phase, wherein the microsphere component comprises a plurality of expandable a microspheres comprising a thermoplastic material selected from the group consisting of a glass, a silica alumina ceramic, an epoxy resin, an unsaturated polyester resin, a silicone resin, a phenolic, a polyvinyl alcohol, a polyvinyl chloride, a polypropylene, a polystyrene, a polyacrylonitrile, a polyimide, a polyamide, other thermoplastic polymers an amino resin, and any combination thereof; and

a fibrous component surrounding at least one of said microspheres.

Serial No.: 10/624,922 Filed: July 21, 2003 Page: 3 of 11

3. (Currently Amended) The composition of claim 2, wherein the microsphere component comprises a combination of <a href="https://example.com/heat-expandable-expandab

- 4. (Original) The composition of claim 2, wherein the microsphere is a polyacrylonitrile (PAN).
- 5. (Currently Amended) The composition of claim 4, wherein the PAN microspheres are a combination of expanded expandable and non-expanded expandable microspheres.
- 6. (Original) The composition of claim 2, wherein the microsphere is a polyvinyl chloride (PVC).
- 7. (Original) The composition of claim 2, wherein the fibrous component comprises aramid fibers, carbon fibers, glass fibers, or any combination thereof.
- 8. (Original) The composition of claim 2, wherein the composition comprises a fibrous component from about 2-15% by weight.
- 9. (Original) The composition of claim 8, wherein the fibrous component comprises about 10% by weight fiber.
- 10. (Original) The composition of claim 2, wherein the microsphere component comprises polyacrylonitrile (PAN) and

Serial No.: 10/624,922 Filed: July 21, 2003

Page : 4 of 11

the fiber component comprises polyester fibers, aramid fibers, glass fibers, or a combination thereof.

- 11. (Original) The composition of claim 2, wherein the microsphere component comprises polyvinyl chloride (PVC) and the fiber component comprises polyester fibers, aramid fibers, glass fibers, or a combination thereof.
- 12. (Currently Amended) A fibrous-reinforced foam made by a method comprising:

contacting a fibrous material with a microsphere component under conditions such that the microsphere component infiltrates the fibers of the fibrous component to generate a mixture; and

heating the mixture <u>in a closed mold</u> under conditions such that the microspheres expand <u>to fill the closed mold</u> such that a plurality of the microspheres are fused together.

- 13. (Currently Amended) The fibrous-reinforced foam of claim
 12, wherein the mixture is expanded by applying a heat to a the mold comprising the mixture.
- 14. (Original) The fibrous-reinforced foam of claim 12, wherein the conditions comprise vibrating the mixture.
- 15. (Currently Amended) The fibrous-reinforced foam of claim
 12, wherein the microsphere component comprises a

Serial No.: 10/624,922 Filed: July 21, 2003

Page : 5 of 11

combination of expanded expandable and non-expanded expandable microspheres.

- 16. (Original) The fibrous-reinforced foam of claim 12, wherein the microsphere component comprises polyacrylonitrile (PAN) microspheres.
- 17. (Currently Amended) The fibrous-reinforced foam of claim
 16, wherein the PAN microspheres are a combination of

 expanded expandable and non-expanded expandable microspheres.
- 18. (Original) The fibrous-reinforced foam of claim 12, wherein the microsphere component comprise polyvinyl chloride (PVC) microspheres.
- 19. (Original) The fibrous-reinforced foam of claim 12, wherein the fibrous component comprises aramid and/or glass fibers.
- 20. (Original) The fibrous-reinforced foam of claim 12, wherein the mixture comprises a fibrous component from about 2-15% by weight.
- 21. (Original) The fibrous-reinforced foam of claim 20, wherein the mixture comprises a fibrous component of about 10% by weight.
- 22. (Original) The fibrous-reinforced foam of claim 12, wherein the microsphere component comprises

Serial No.: 10/624,922 Filed: July 21, 2003

Page : 6 of 11

polyacrylonitrile (PAN) and the fiber component comprises polyester fibers, aramid fibers, glass fibers, or a combination thereof.

- 23. (Original) The fibrous-reinforced foam of claim 12, wherein the microsphere component comprises polyvinyl chloride (PVC) and the fiber component comprises polyester fibers, aramid fibers, glass fibers, or a combination thereof.
- 24. (Currently Amended) A method of making a fibrous-reinforced foam, comprising:

mixing a microsphere component with a fiber component
in a closed mold;

vibrating the closed mold under conditions the cause the microspheres to infiltrate $\frac{1}{2}$ fibrous matrix of the fiber component;

heating the mold to expand the microspheres and fuse them together; and

allowing the mixture to cool.

- 25. (New) The composition of claim 2, wherein the ratio of unexpanded to expanded microspheres is 7:1.
- 26. (New) The composition of claim 2, wherein the microsphere component further comprises a plurality of non-expandable microspheres selected from the group consisting of a glass, a silica-alumina ceramic, an epoxy resin, an

Serial No.: 10/624,922 Filed: July 21, 2003

Page : 7 of 11

unsaturated polyester resin, a silicone resin, a phenolic, and a amino resin.

- 27. (New) The composition of claim 26, wherein the microsphere component comprises a combination of expanded and non-expanded microspheres.
- 28. (New) A foam composition comprising:

a fibrous material and a plurality of microspheres, wherein the microspheres comprise heat-expandable microspheres, wherein the microspheres are interspersed within the fibrous material forming a part of the structure of the foam, and wherein the foam lacks a separate binder phase.